

Read the passage about the possibility of sounds coming from the northern lights. Then answer questions 1-16.

The Mystery of Auroral Sounds

by Daniel Hudon

For years, people have reported hearing sounds when they see dazzling displays of northern lights. Compared to the tens of thousands of people who have witnessed these sky shows, the “earwitness” reports are rare: just a few hundred documented reports of auroral sounds, all heard during intense auroral displays.

2 Even so, the reported sounds have a lot in common. They appear to be coordinated with the lights, and both soft, crackling sounds and faint whistling or swishing sounds are heard. One observer said, “You think you hear the rustle of long green gowns of silk.” Others describe the sounds as being like whispering in the ear, the crinkling of plastic, or the slow *wubble-wrangwubble-wub* of a piece of metal flexing. Strangely, veteran aurora observers, including some scientists, have heard the sounds only once or twice in their lifetimes. There’s only one problem with all these sound reports: They shouldn’t exist!

3 Auroral displays typically originate above 90 kilometers in the atmosphere, about nine times higher than a 747 jet typically flies. At this altitude, the atmosphere is too thin for sound waves to travel through it. Even if sound waves were somehow created high in the atmosphere, they would take five minutes or longer to travel down to the ground. Just as a

rumble of thunder is heard several seconds after a distant bolt of lightning is seen, auroral sounds, if they are real, would be expected to lag behind the visual display.

4 So why do observers report that the two occur at the same time? And, why will one observer report hearing sounds while another standing only a few feet away hears nothing?

5 This mystery has caused many scientists to doubt that auroral sounds are real. In fact, some scientists have tried to explain them as a psychological effect: Because observers expect sounds to be associated with dazzling visual displays, such as special effects in science-fiction movies, or real-life fireworks, they imagine the sounds that they expect to hear.

6 Another part of the mystery is that attempts to record the sounds with a microphone and tape recorder have failed.

7 But suppose the sounds are real? What could be the cause?

8 Auroras themselves are caused by energetic particles from the sun zipping down Earth’s magnetic field lines and colliding with atoms in Earth’s atmosphere. These collisions excite the atoms, causing them to create electromagnetic waves—light—that we see as the aurora.

9 The bombardment of Earth’s atmosphere by **charged** solar particles also produces low-frequency radio waves. Unlike **acoustic** waves (for example, from a clap of thunder or the clapping of hands), which travel at the relatively slow speed of sound, radio waves whiz along at the speed of light.

- 10 While some scientists think that the sounds are created by static electricity during the auroral storm, Colin Keay, an Australian physicist, thinks that radio waves provide the solution. In his theory, the radio waves travel to Earth's surface, where they transfer their energy into acoustic waves with the help of nearby objects that act as "receivers." These "receivers" could be blades of grass, pine needles, leaves, or even a person's hair. When they begin vibrating, acoustic sounds are heard. This also would explain why one observer hears something while another hears nothing: The first happens to be closer to a particular "receiver."
- 11 Scientists have recorded these radio waves for decades, using radio equipment. But a recording of the sound waves produced by these radio waves has yet to be made. Until a tape recording is made, auroral sounds will continue to be one of the mysteries of the northern lights.

Please do not write on this test. Use the scantron provided for you.

Use **"The Mystery of Auroral Sounds"** to answer questions 1-16.

1. What are auroral sounds?
 - A. Imaginary sounds that occur just before sunrise
 - B. Sounds that occur at the same time as the northern lights
 - C. Sounds that occur at the same time as acoustic waves
 - D. Imaginary sounds that occur with fireworks displays
2. Auroral sounds occur
 - A. in the daytime.
 - B. during thunderstorms.
 - C. once or twice a year.
 - D. at night.
3. The scientists who think that these sounds are a "psychological effect" think that
 - A. people are imagining the sounds.
 - B. sounds can be heard when a person is alone.
 - C. waves bouncing off a person's hair cause the sounds.
 - D. Earth's magnetic field causes people to hear the sounds.
4. What causes the auroras to occur?
 - A. Acoustic waves hit receivers to make them visible.
 - B. Static electricity during storms causes waves to hit charged particles.
 - C. Radio waves in space travel to Earth's surface at the speed of light.
 - D. Energetic particles from the sun collide with atoms in Earth's magnetic field.

5. As used in the passage, the word "acoustic" refers to which type of waves?
 - A. light
 - B. sound
 - C. radio
 - D. magnetic
6. With which statement would scientist Colin Keay most likely agree?
 - A. The auroral sounds come from an active imagination.
 - B. The auroral sounds are created by static electricity.
 - C. We can learn more about auroral sounds by studying radio waves.
 - D. We can experience auroral sounds maybe once or twice in a lifetime.
7. According to "earwitness" reports, what do the sounds have in common?
 - A. they originate 90 kilometers in the atmosphere
 - B. they are caused by energetic particles from the sun zipping down Earth's magnetic field lines
 - C. they are not real
 - D. they appear to be coordinated with the lights
8. Why does the author use Colin Keay's theory in this passage?
 - A. because Keay is an Australian physicist
 - B. because Keay thinks that radio waves provide the solution to the mystery
 - C. because the author wants to use an opinion from an expert to help the reader understand the mystery
 - D. because the author wants readers to believe that Australian physicists know why there are auroral sounds

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9. The point of view of this passage is best described as

- A. reliable first-person
- B. third-person
- C. second-person
- D. unreliable first-person

10. Some scientists doubt that the mystery of auroral sounds is real because

- A. there have been just a few hundred documented reports of the sounds.
- B. they believe the sounds can be explained as a psychological effect.
- C. radio waves travel too fast for people to be able to hear them.
- D. often people exaggerate these types of occurrences in order to receive attention.

11. What is the reason that the auroral sounds "shouldn't exist"?

- A. Sounds are expected to be associated with dazzling visual displays.
- B. Particles are expected to collide with atoms in Earth's atmosphere.
- C. The atmosphere where the sound waves occur is too thin for sound waves to travel through it.
- D. Acoustic waves travel at the relatively slow speed of sound, unlike radio waves that whiz along at the speed of light.

12. Which of the following is an opinion?

- A. The sounds are like whispering in the ear, the crinkling of plastic, or the slow *wobble-wranglewubble-wub* of a piece of metal flexing.
- B. Auroral displays originate in the atmosphere about nine times higher than a 747 jet typically flies.
- C. Auroras are caused by energetic particles from the sun that collide with atoms in Earth's atmosphere.
- D. Low-frequency radio waves are produced in Earth's atmosphere by charged solar particles.

13. The best **summary** for this passage is

- A. People who claim they hear sounds when viewing the northern lights are just hearing things because they expect to hear something, but there is no possibility that the lights are accompanied by sound.
- B. The mystery of the auroral lights will not be solved until physicists like Colin Keay figure out how to use tape recorders.
- C. Many scientists believe that the sounds people hear when they are viewing the northern lights can be explained as a psychological effect.
- D. Even though there is no proof that auroral sounds really can be heard, many people claim to have heard them, and some scientists have come up with some possible causes for the sounds.

14. The following ideas are all important to the readers' understanding of the passage EXCEPT:

- A. Many scientists doubt that the auroral sounds are real.
- B. One observer compared the sounds to the rustle of long green silk gowns.
- C. The atmosphere where the northern lights originate is too thin for sound waves to travel through it.
- D. Some acoustic waves travel at the relatively slow speed of sound, but radio waves speed along at the speed of light.



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15. Look at the following dictionary entries. Which meaning from the dictionary entries is closest to the meaning of the word "charged" in paragraph 9?

- A. *charge*, vb. To accrue debt or financial obligation
- B. *charge*, vb. To rush forward
- C. *charge*, adj. Containing a certain quantity of electricity
- D. *charge*, adj. Possessing or showing strong emotion

16. Paragraph 2 is especially strong in the use of

- A. imagery.
- B. personification.
- C. dialect.
- D. repetition.



Here is the *first section* of Stephanie's rough draft of her article. Use it to answer questions 17-23.

(1)The events around town this weekend promise a little something for everyone. (2)You can watch a parade, roll up your sleeves to help a local organization, or snag a leading role in an upcoming community-produced play. (3)Read on for details! (4)Our sleepy town will awaken Saturday when the Earth Day parade kicks off at 9 a.m. (5)The parade will start at Davis and Parmer and will wind its way through town until it reaches Jefferson Park, and the Earth Day celebration will be held there. (6)The celebration will include a number of demonstrations to help us learn more about protecting our environment. (7)Chairperson Allison McGee suggests that we bring along our toxic household cleaners. (8)These hazardous cleaners can be traded in for Earth-friendly cleaners. (9)The Earth-friendly cleaners have been donated by the nonprofit organization For Life. (10)Live music and food booths will also be part of the festivities. (11)Jefferson Park is my favorite location for many events each year because of its size and pleasant surroundings. (12)The Earth Day celebration will continue until 5 p.m. (13)Calling all caring citizens! (14)The nonprofit organization Plants and Gardens is looking for volunteers to help with this year's community project. (15)The organization will be planting fruits and vegetables to harvest this fall. (16)These fruits and vegetables will then be donated to soup kitchens, senior citizen communities, and similar facilities. (17)Volunteers for this project need not be experienced gardeners. (18)James Evans of Green Nursery will provide a short demonstration at 2 p.m. to help guide less-experienced volunteers. (19)All gardening supplies will be provided, and snacks will be served. (20)Those interested in assisting should go to Green Nursery on O'Connor and Davidson between 2 and 4 p.m.

Read this *second section* of Stephanie's rough draft and answer questions 24-28. This section has groups of underlined words. The questions ask about these groups of underlined words.

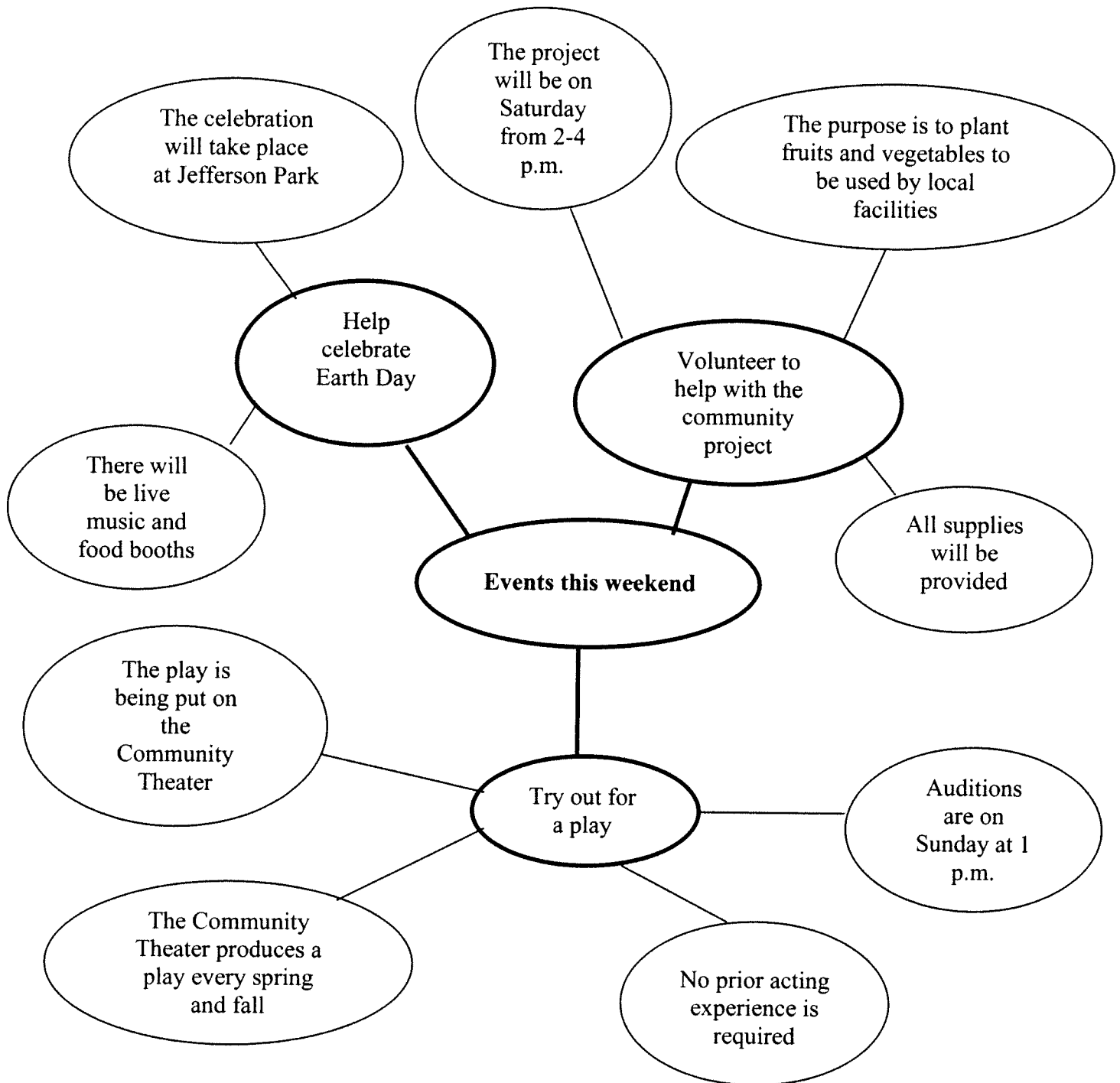
(21)The Community Theater is gearing up for its spring production, and auditions will begin at 1 p.m. on Sunday. (22)This year, Phyllis McMurray, the director, has chosen *Our Town* because of popular requests. (23)This Pulitzer Prize-winning drama by Thornton Wilder is considered a classic portrayal of small-town American life.

(24)McMurray needs help with all aspects of the theatrical production including lighting, sound, and scenery. (25)"Students are defiantly encouraged to read for a main role, or they can volunteer their time to the production aspect of the play," McMurray said during a telephone interview. (26)Many of us are very familiar with *Our Town* because we have read the play in our English class as sophomores. (27)For those who want to audition, break a leg! (28)The parts of main characters George Gibbs and Emily Webb might just go to two of Davis High Schools' talented students! (29)You and I, however, will have to wait over a month to see who will get the parts. (30)The actors selected for *Our Town* is scheduled to rehearse every weekend for at least a month. (31)No opening date has been set, watch for updates in this column to know when the curtain will open on *Our Town*.

A Weekend of Opportunity

Stephanie is writing an article for her high school's newspaper. The purpose of Stephanie's article, "What's Going On?," is to highlight a few of the upcoming weekend events.

Stephanie made a web of the information she collected. Use this web to answer the appropriate questions.



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Use the web and rough draft of Stephanie's article to answer questions 17-28.

17. When Stephanie rereads the information on her web under Volunteer to help with the community project, she will *most* likely add information that tells

- A. why fruits and vegetables are important to grow.
- B. what supplies are needed to complete the project.
- C. where the project will take place.
- D. what other community projects will be completed this year.

18. Which of these is *least* important to her article?

- A. The Community Theater produces a play every spring and fall.
- B. No prior acting experience is required.
- C. There will be live music and food booths.
- D. The celebration will take place at Jefferson Park.

19. Stephanie's web will *best* help her to

- A. concentrate on using colorful and descriptive language as she writes
- B. focus on the information her readers will need to know
- C. decide what she likes most about writing for the school newspaper
- D. verify the accuracy of the information she will include in her article

Use the *first section* of Stephanie's rough draft to answer the following questions.

20. In writing paragraph 1, Stephanie *most* likely tried to

- A. keep the reader interested by shifting the point of view.
- B. include details so that the reader would not have to read her entire article.
- C. state her ideas in a way that would grab the reader's attention.
- D. write with a humorous tone so that the reader laughs aloud.

21. How can sentence 5 *best* be revised?

- A. Starting at Davis and Parmer, the parade will wind its way through town until it reaches Jefferson Park, where the Earth Day celebration will be held.
- B. The parade will, starting at Davis and Parmer, wind its way through town until it reaches Jefferson Park, where the Earth Day celebration will be held.
- C. The parade will wind its way through town starting at Davis and Parmer until it reaches Jefferson Park, where the Earth Day celebration will be held.
- D. Jefferson Park is where the Earth Day celebration will be held, and the parade will wind its way through town until it reaches there, starting at Davis and Parmer.

22. Which sentence is *least* relevant to Stephanie's article?

- A. 8
- B. 11
- C. 12
- D. 16

23. The point of view of the **second sentence** in this passage is best described as

- A. first person
- B. second person
- C. third-person limited
- D. third-person omniscient



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Use the *second section* of Stephanie's article to answer the following questions.

24. In sentence 24, how should "theatrical production including lighting," be written?

- A. Theatrical Production, including lighting
- B. theatrical production including, lighting,
- C. theatrical production, including lighting,
- D. As it is

25. In sentence 25, how should "defiantly encouraged to read for a main role," be written?

- A. definitely encouraged to read for a main role,
- B. definitely encouraged to read for a main roll
- C. definitely encouraged to read for a main roll,
- D. As it is

26. In sentence 28, how should "Davis High Schools' talented students" be written?

- A. Davis High School's talented students
- B. Davis high school's talented students
- C. Davis High Schools talented students
- D. As it is

27. In sentence 30, how should "The actors selected for *Our Town* is scheduled" be written?

- A. The actors' selected for *Our Town* is scheduled
- B. The actors, selected for *Our Town*, are scheduled
- C. The actors selected for *Our Town* are scheduled
- D. As it is

28. In sentence 31, how should "date has been set, watch" be written?

- A. date has been set; watch
- B. date has been set; Watch
- C. date has been set watch
- D. As it is

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29. Read the following paragraph:

¹ Car companies recommend that drivers rotate their tires every nine thousand miles. ² This allows the tires to wear evenly, improving driving performance. ³ In fact, studies show that unevenly worn tires are a major cause of traction loss on the road. ⁴ So the next time you visit your mechanic, ask to have your tires rotated.

Read the following sentence:

This is very dangerous, especially when the roads are wet.

Where would the sentence **best** be placed in the paragraph?

- A. after sentence 1
- B. after sentence 2
- C. after sentence 3
- D. after sentence 4

30. Here are four sentences that must be rearranged in order to create a logical paragraph:

1. When the lower bill touches a fish, the bill shuts automatically, and the fish is caught.
2. One such bird is the black skimmer, which lives on the eastern shores of North America.
3. For some birds, the nerves in their bills help them find fish to eat.
4. This bird's lower bill is much longer than its upper bill and can easily skim the surface of the water.

Which of the following shows the correct order of the sentences?

- A. 1, 2, 3, 4
- B. 2, 4, 3, 1
- C. 3, 2, 4, 1
- D. 4, 1, 3, 2

31. Read these sentences:

Katherine Blodgett invented modern eyeglasses.

Katherine Blodgett was the first woman to graduate with a doctorate in physics from Cambridge University, a school in England.

Which of the following is the BEST way to combine the two sentences?

- A. The inventor of modern eyeglasses, was the first woman to graduate with a doctorate in physics, Katherine Blodgett, from a school in England, Cambridge University.
- B. The inventor of modern eyeglasses, at Cambridge University, a school in England, Katherine Blodgett was the first woman to graduate with a doctorate in physics.
- C. Katherine Blodgett, the inventor of modern eyeglasses, was the first woman to graduate with a doctorate in physics from Cambridge University, a school in England.
- D. Katherine Blodgett, the first woman to graduate with a doctorate in physics, invented modern eyeglasses, from Cambridge University, a school in England.

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32. Choose the correct way to punctuate the underlined part of the sentence.

France the winner of the 1998 World Cup faced formidable opposition in the 2002 World Cup, especially against the strong teams from South America.

- A. France the winner of the 1998 World Cup,
- B. France, the winner of the 1998 World Cup
- C. France, the winner of the 1998 World Cup,
- D. France the winner of the 1998, World Cup,

33. Choose the word or group of words that BEST replaces the underlined part of the sentence.

By the time they arrive, I was finished cooking.

- A. will have finished
- B. have finished
- C. will finish
- D. finished

34. Which sentence is written correctly?

- A. Since Sasha sung in many concerts, she was confident about tonight's performance.
- B. The horse has escaped from the barn before we knew it.
- C. When I last saw it, my book has lain on the kitchen table.
- D. Marcus has been our class president for the past two years and will probably be elected again.



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Read the letter, and then answer the questions that follow.

Dear Noah,

¹ Do you remember how much I was complaining about feeling bored out of my mind?

² Well, that changed quickly!

³ The day I mailed your letter at the post office, I stopped by Osgood's Shop. ⁴ While I was looking at the sale items, Mr. Osgood told me that his stock clerk had left for the summer. ⁵ He wanted to know if I might want the job until she returned.

⁶ I ran home to ask my parents, and they gave me permission. ⁷ I started doing inventory, cleaning stock shelves, and sweeping floors.

⁸ After I'd been working about a month Mr. Osgood taught me how to operate the cash register. ⁹ Sometimes when things got busy toward the end of summer, he would even let me assist customers. ¹⁰ I knew the merchandise pretty well.

¹¹ My summer has flown by, and I have some money saved to show for it! ¹² I hope your summer was good too. ¹³ Please write and tell me about it.

Your cousin,

Horace

35. Which sentence has a punctuation error?

- A. sentence 5
- B. sentence 6
- C. sentence 7
- D. sentence 8

36. Read the following sentence:

I never expected to have such a profitable summer.

Where would the sentence **best** be placed in the letter?

- A. after sentence 3
- B. after sentence 5
- C. after sentence 8
- D. after sentence 11

37. Choose the **best** transition to begin Sentence 10.

- A. At first
- B. However,
- C. By then
- D. Nevertheless,



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Read this paragraph, and answer the questions that follow.

¹ Did you know that shooting stars are actually small particles of space dust similar to gravel or sand? ² Shooting stars are those streaks of light. ³ Those streaks of light blaze through the night sky. ⁴ Shooting stars, or meteors, become visible when they meet up with air molecules in Earth's atmosphere. ⁵ The collision of the dust and air molecules occurs at such high speeds that the dust particles heat up and glow. ⁶ As they are burning, the dust particles appear in the evening sky as shooting stars.

38. Choose the BEST way to combine sentences 2 and 3.

- A. Shooting stars are those streaks of light, and they also blaze through the night sky.
- B. Shooting stars are those streaks of light that blaze through the night sky.
- C. Shooting stars are those streaks of light, and shooting stars blaze through the night sky.
- D. Shooting stars are those streaks of light and moreover blaze through the night sky.

39. The writer wants to replace the underlined phrase in sentence 4 with a more formal expression. Which of these is the BEST replacement?

- | | | |
|---------------|--|--------------|
| A. encounter | | C. undergo |
| B. experience | | D. undertake |

40. The Modern Language Association (MLA) recommends these guidelines for citing works used for reference and placing them in the following order:

1. Use quotation marks to indicate the title of an essay, chapter, or article.
2. Italicize (or underline) the title of a book.
3. Include publishing information last.

The student who wrote the paragraph on shooting stars found the information for the paragraph in an unsigned essay in a book. According to the MLA recommendations above, which is the correct way for the student to cite this source?

- A. *The Complete Guide to the Night Sky*. Boston: Aileen, 1984. "Sky Litter."
- B. "Sky Litter." *The Complete Guide to the Night Sky*. Boston: Aileen, 1984.
- C. Boston: Aileen, 1984, "Sky Litter," from *The Complete Guide to the Night Sky*.
- D. Sky Litter from "*The Complete Guide to the Night Sky*," Boston: Aileen, 1984.



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Use the following poem to answer questions 41-45.

Diving

Climbing the ladder like a caterpillar
climbing a tree.
Fear is gathering up like dust in an attic.
The board wobbles
An old bridge.
I jump up
A frog after a fly.
Pointing my body
Like a needle.
The wind rushing
Past is a hurricane.
Water glistens below.
Twisting and turning.
Bracing myself.
Splash!
Silent cheering
Alone and at peace
Like a dolphin
Fear is all gone
Swimming back
Fear now returns.

~Matthew Garvey Snover

41. The line "Fear is gathering up like dust in the attic" is an example of what poetic technique?

- A. Personification
- B. Simile
- C. Symbolism
- D. Alliteration

42. The line "Twisting and turning" is an example of what poetic technique?

- A. Personification
- B. Simile
- C. Symbolism
- D. Alliteration

43. "Splash" is an example of what poetic technique?

- A. Metaphor
- B. Personification
- C. Onomatopoeia
- D. Dialect

44. The conflict shown in this poem is best described as

- A. person vs. person
- B. person vs. self
- C. person vs. technology
- D. person vs. society

45. The lines "The board wobbles / An old bridge" are an example of what poetic technique?

- A. Metaphor
- B. Personification
- C. Hyperbole
- D. Dialect

